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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/602,079	06/22/2000	Vincent A. O'Byrne	97-3-802	8841
32127	7590	03/30/2004		
VERIZON CORPORATE SERVICES GROUP INC. C/O CHRISTIAN R. ANDERSEN 600 HIDDEN RIDGE DRIVE MAILCODE HQEO3H14 IRVING, TX 75038				
			EXAMINER VUONG, QUOCHIE B	
			ART UNIT 2685	PAPER NUMBER 7

DATE MAILED: 03/30/2004

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

09/602,079

Applicant(s)

O'BYRNE, VINCENT A.

Examiner

Quochien B Vuong

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --
Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 06/22/00.
2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-26 is/are pending in the application.
4a) Of the above claim(s) _____ is/are withdrawn from consideration.
5) ☐ Claim(s) _____ is/are allowed.
6) ☒ Claim(s) 1-26 is/are rejected.
7) ☐ Claim(s) _____ is/are objected to.
8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. _____.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☒ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)
Paper No(s)/Mail Date 2.
4) ☐ Interview Summary (PTO-413)
Paper No(s)/Mail Date. _____.
5) ☐ Notice of Informal Patent Application (PTO-152)
6) ☐ Other: _____.

DETAILED ACTION

Information Disclosure Statement

1. information disclosure statement (IDS) submitted on 06/22/00 is in compliance with the provisions of 37 CFR 1.97. Accordingly, the information disclosure statement is being considered by the examiner.

Double Patenting

2. The nonstatutory double patenting rejection is based on a judicially created doctrine grounded in public policy (a policy reflected in the statute) so as to prevent the unjustified or improper timewise extension of the "right to exclude" granted by a patent and to prevent possible harassment by multiple assignees. See *In re Goodman*, 11 F.3d 1046, 29 USPQ2d 2010 (Fed. Cir. 1993); *In re Longi*, 759 F.2d 887, 225 USPQ 645 (Fed. Cir. 1985); *In re Van Ornum*, 686 F.2d 937, 214 USPQ 761 (CCPA 1982); *In re Vogel*, 422 F.2d 438, 164 USPQ 619 (CCPA 1970); and, *In re Thorington*, 418 F.2d 528, 163 USPQ 644 (CCPA 1969).

A timely filed terminal disclaimer in compliance with 37 CFR 1.321(c) may be used to overcome an actual or provisional rejection based on a nonstatutory double patenting ground provided the conflicting application or patent is shown to be commonly owned with this application. See 37 CFR 1.130(b).

Effective January 1, 1994, a registered attorney or agent of record may sign a terminal disclaimer. A terminal disclaimer signed by the assignee must fully comply with 37 CFR 3.73(b).

3. Claims 1-26 are rejected under the judicially created doctrine of obviousness-type double patenting as being unpatentable over claims 1-17 of U.S. Patent No. 6,243,584. Although the conflicting claims are not identical, they are not patentably distinct from each other because:

Regarding claims 1-6, 21, and 24, the claims 1-4 of U. S. Patent No. 6,243,584 encompass the claimed limitation including a method for increasing capacity of a wireless network having a plurality of cell sites, comprising the steps of: defining a pool

of available frequencies for assignment; assigning an available frequency from the pool of available frequencies to each cell site of the plurality of cell sites, the available frequency assigned to limit neighboring cell sites assigned a same frequency as the available frequency, determining signal quality parameters associated with at least one cell site of the plurality of cell sites; modifying the pool of available frequencies for assignment based on the determined signal quality parameters associated with the at least one cell site, and identifying a coverage area of the network; wherein the defining step includes the substep of selecting at least two frequencies from the pool of frequencies available for assignment, wherein the assigning includes the substeps of: selecting one of the cell sites, determining frequencies assigned to the cell sites neighboring the selected cell site, and assigning one of the available frequencies to the selected cell site based on the determined frequencies assigned to the neighboring cell sites; comparing the determined interference amount to a predetermined threshold, increasing the pool of frequencies available for assignment when the determined interference amount is greater than the predetermined threshold, and assigning the increased pool of available frequencies to the cell sites so as to minimize the number of neighboring cell sites assigned a same one of the available frequencies.

Regarding claims 7-12, 22, and 25, the claims 5-8 of U. S. Patent No. 6,243,584 encompass the claimed limitation including a system for increasing capacity of a digital wireless network having a plurality of cell sites, comprising: a frequency defining component to define a pool of frequencies available for assignment; an assignment component to assign one of the available frequencies from the frequency pool to each

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of the cell sites based on frequencies assigned to neighboring cells sites to minimize a number of neighboring cell sites assigned a same one of the available frequencies, a network coverage component to identify a coverage area of the network, and wherein the frequency defining component includes: a frequency selection component to select the frequencies available for assignment based on the identified coverage area of the network, a election component to select at least two frequencies from the pool of frequencies available for assignment, a frequency selection component to select the frequencies available for assignment based on the identified coverage area of the network, and assignment component includes: a selection component to select one of the cell sites, a determination component to determine frequencies assigned to the cell sites neighboring the selected cell site, a frequency assignment component to assign one of the available frequencies to the selected cell site based on the determined frequencies assigned to the neighboring cell sites, a determination component to determine an amount of interference at the cell sites caused by the neighboring cell sites after assigning frequencies to all of the cell sites, a comparison component to compare the determined interference amount to a predetermined threshold, a frequency component to increase the pool of frequencies available for assignment when the determined interference amount is greater than the predetermined threshold, and a frequency assignment component to assign the increased pool of available frequencies to the cell sites so as to minimize the number of neighboring cell sites assigned a same one of the available frequencies.

Regarding claims 13-18, 23, and 26, the claims 9-12 of U. S. Patent No. 6,243,584 encompass the claimed limitation including computer program product for increasing capacity of a digital wireless network having a plurality of cell sites, comprising: a frequency defining module to define a pool of frequencies available for assignment; and an assignment module to assign one of the available frequencies from the frequency pool to each of the cell sites to minimize a number of neighboring cell sites assigned a same one of the available frequencies, a network coverage module to identify a coverage area of the network, the frequency defining module includes: a selection module to select at least two frequencies from the pool of frequencies available for assignment, wherein the assignment module includes: a selection module to select one of the cell sites, a determination module to determine frequencies assigned to the cell sites neighboring the selected cell site, a frequency assignment module to assign one of the available frequencies to the selected cell site based on the determined frequencies assigned to the neighboring cell sites, a determination module to determine an amount of interference at the cell sites caused by the neighboring cell sites after assigning frequencies to all of the cell sites, a frequency selection module to select the frequencies available for assignment based on the identified coverage area of the network.

Regarding claim 19, the claim 13 of U. S. Patent No. 6,243,584 encompass the claimed limitation including a method of increasing capacity of a wireless network, comprising the steps of: identifying cell sites of the wireless network; defining a pool of available frequencies for assignment; selecting one of the cell sites; determining

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frequencies assigned to the cell sites neighboring the selected cell site to provide determined frequencies; assigning one of the available frequencies to the selected cell site based on the determined frequencies to limit a number of neighboring cell sites assigned a same one of the available frequencies; determining signal quality parameters associated with at least one cell site of the plurality of cell sites; and modifying the pool of available frequencies for assignment based on the determined signal quality parameters associated with the at least one cell site.

Regarding claim 20, the claim 14 of U. S. Patent No. 6,243,584 encompass the claimed limitation including a computer-implemented method for optimally increasing capacity of a digital network having a plurality of cell sites, comprising the steps of- (a) defining a pool of frequencies available for assignment; (b) selecting one of the cell sites; (c) determining frequencies assigned to the cell sites neighboring the selected cell site; (d) assigning one of the available frequencies to the selected cell site based on the determined frequencies assigned to the neighboring cell sites; (e) determining an amount of interference at the cell sites caused by the neighboring cell sites after assigning frequencies to all of the cell sites; (f) comparing the determined interference amount to a predetermined threshold; (g) increasing the pool of frequencies available for assignment when the determined interference amount is greater than the predetermined threshold; and (h) repeating steps (d) through (g) using the increased number of available frequencies until the determined interference amount is less than the predetermined threshold.

Conclusion

4. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure.

Cox et al. (US 3,764,915) disclose dynamic program control for channel assignment in mobile communication systems.

Doner (US 5,649,292) discloses obtaining improved frequency reuse in wireless communication systems.

Rappaport et al. (US 5,722,043) discloses method and apparatus of assigning and sharing channels in a cellular communication system.

Haartsen (US 5,732,353) discloses automatic control channel planning in adaptive channel allocation systems.

Lee et al. (US 5,758,287) disclose hub and remote cellular telephone system.

Plehn (US 5,839,074) discloses process of allocating frequencies to base stations of a mobile radiotelephone network.

Kataoka (US 5,857,143) discloses channel allocation method used for mobile type communication devices.

Gitlits (US 5,859,841) discloses method and apparatus for frequency allocation in a cellular telecommunications network.

Karlsson et al. (US 5,898,928) disclose adaptive frequency allocation in a telecommunication system.

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5. Any response to this action should be mailed to:

Commissioner of Patents and Trademarks

Washington, D.C. 20231

or faxed to:

(703) 872-9314

Hand-delivered responses should be brought to Crystal Park II, 2021

Crystal Drive, Arlington, VA 22202, Sixth Floor (Receptionist).

Any inquiry concerning this communication from the examiner should be directed to Quochien B. Vuong whose telephone number is (703) 306-4530. The examiner can normally be reached on Monday through Friday from 9:30 a.m. to 6:00 p.m. EST.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Edward Urban, can be reached on (703) 305-4385.

Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the Customer Service whose telephone number is (703) 306-0377.


QUOCHIE B. VUONG
PRIMARY EXAMINER

Quochien B. Vuong

Mar. 19, 2004.